

Date: Sat, 23 Oct 93 04:30:13 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V93 #87
To: Ham-Ant

Ham-Ant Digest Sat, 23 Oct 93 Volume 93 : Issue 87

Today's Topics:

 2m antenna for apartment?
 5/8 wave questions
 Dual band twinlead J-pole?
 Mobile Antennas (3 msgs)
 SWR measurements are too good! (2 msgs)
 Want opinion on MFJ-1796 antenna-tnx

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 21 Oct 1993 11:07:51 -0500
From: sdd.hp.com!vixen.cso.uiuc.edu!howland.reston.ans.net!pipex!bnr.co.uk!
corpgate!crchh327.bnr.ca!kharker@network.ucsd.edu
Subject: 2m antenna for apartment?
To: ham-ant@ucsd.edu

Another idea is to go to radio shack (or other places) and buy a bnc
connector with two suction cups on it and about six feet of RG-58 feedline
and another bnc connector on the end of that. Then, you can put the
suction cups on the window, attach your telescoping whip to the outside
end, and the feedline to your ht. This is relatively inexpensive, and it
gets your antenna outside. I haven't tried this, but you might consider it.

--

=====

Kenneth E. Harker	Bell Northern Research	"Any opinions expressed
kharker@bnr.ca	Richardson, Texas, USA	are solely mine and do

N1PVB

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not represent BNR"

Date: 23 Oct 93 03:10:45 GMT

From: ogicse!uwm.edu!vixen.cso.uiuc.edu!moe.ksu.ksu.edu!osuunx.ucc.okstate.edu!
olesun!gcouger@network.ucsd.edu

Subject: 5/8 wave questions

To: ham-ant@ucsd.edu

In article <00974676E5DD9B60.24407DC2@drager.com>,

Joe Landis - Systems/Network Mgr. - x2621 <landisj@drager.com> wrote:

>Hi,

>I've built some simple 1/4 wave ground plane antennas for 2M that work fairly
>well, but now I want to do something that will give me some more gain. 5/8 wave
>antennas look interesting - omnidirectional, with more gain. I've got some
>questions about homebrewing a few.

>

>Is a 5/8 wave vertical just a gp with a longer radiator, or does it need a
>base loading coil?

>

>Is the feed point impedance of a 5/8 wave 50 ohms?

>

I have had some success in building a J-pole using a 5/8 radiator instead
of a 1/2 wave. It seemed to give a s unit or better reception. I have
only tried it once but it worked ok.

Gordon AB5Dg

```
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/*      I Speak only for myself and not for anyone else      */
```

Date: Thu, 21 Oct 1993 15:38:42 GMT

From: das.wang.com!wang!djenkins@uunet.uu.net

Subject: Dual band twinlead J-pole?

To: ham-ant@ucsd.edu

Recently someone posted something about a copper cactus dualband jpole that
had a second matching section up near the top. It looked something like this:

| |

does it follow that one could do a similar thing with the twinlead version:

Also, what, if anything, does it mean that my 2M twin lead J-pole already matches almost as well on 440 at it does on 2M?

73, Dave, n1mxv

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Date: Tue, 19 Oct 1993 13:28:34 GMT
From: [sdd.hp.com!spool.mu.edu!howland.reston.ans.net!darwin.sura.net!
perot.mtsu.edu!raider!theporch!jackatak!root@network.ucsd.edu](mailto:sdd.hp.com!spool.mu.edu!howland.reston.ans.net!darwin.sura.net!perot.mtsu.edu!raider!theporch!jackatak!root@network.ucsd.edu)
Subject: Mobile Antennas

To: ham-ant@ucsd.edu

henrys@netcom.com (Henry B. Smith) writes:

> : 2. How do you tune the bugcatcher?
> I use a noise bridge and a general coverage receiver and about 2 or 3
> feet of coax. I set the tap and then tune the receiver for the lowest noise.
> Once there, I zero it in.
>
> I think that one of these new antenna meter gadgets would be great for this.
Yes, they are. The MFJ-249 is excellent, provided you calibrate it and
are certain you and the device are OUT of the near-field pattern of
the antenna -- the "sphere of influence" ;^)

> Once you find the spot for a band, you write it down and do the next one.
Yep. That was how I did it the first time...

> Plan on spending an evening tuning the thing.
> The performance warrents the time spent.
What Smitty said. Take your time and do it right...it is time well
spent, but spend a lot if you want good results.

> Good luck
Everyone needs luck on an antenna installtion like a mobile! ;^)
73, Jack/W4PPT (mobile)

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+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
| Jack GF Hill           |Voice: (615) 459-2636 -           Ham Call: W4PPT |
| P. O. Box 1685         |Modem: (615) 377-5980 -   Bicycling and SCUBA Diving |
| Brentwood, TN 37024|Fax:  (615) 459-0038 -           Life Member - ARRL |
| root@jackatak.raider.net - "Plus ca changer, plus c'est la meme chose" |
+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
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Date: Tue, 19 Oct 1993 13:24:07 GMT
From: sdd.hp.com!cs.utexas.edu!math.ohio-state.edu!howland.reston.ans.net!
darwin.sura.net!perot.mtsu.edu!raider!theporch!jackatak!root@network.ucsd.edu
Subject: Mobile Antennas
To: ham-ant@ucsd.edu

turner@st-paul.ics.uci.edu (Clark Savage Turner) writes:

> Kevin brings up some interesting points. I wonder about two things - anyone
> else think about this?
> 1. Mounting mobile antennas on a VW van? I once mounted a Hustler down
> on the bumper of one of these, and it "worked", but I sense that is
> not a good place for it.

Probably was not a great place, but more because the bumper isn't part of nor bonded electrically to the frame. A frame mount with bonding straps is better... the metal around the antenna does make a difference, but the difference is "stable" or constant, and once you tune it...it doesn't change. Sure, it would be better to go to the roof, but then there are severe mechanical mounting problems to fight, and the antenna must become shorter or get smashed on overpasses and be illegal to boot!

> 2. How do you tune the bugcatcher?

Just tap the coil with Henry's (Henry Allen, WB5TYD, GLA Systems, Caddo Mills, TX -- I am but a happy customer) "patented" tapping kit which makes things real easy. A SWR analyzer of some kind and a field strength meter sure help, but an SWR bridge and transceiver is all you need -- plus the obligatory piece of paper to supplant the memory cells! ;^)

73, Jack/W4PPT(mobile)

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+-----+
| Jack GF Hill          |Voice: (615) 459-2636 -           Ham Call: W4PPT |
| P. O. Box 1685        |Modem: (615) 377-5980 -   Bicycling and SCUBA Diving |
| Brentwood, TN 37024  |Fax:   (615) 459-0038 -           Life Member - ARRL |
| root@jackatak.raider.net - "Plus ca changer, plus c'est la meme chose" |
+-----+
```

Date: Tue, 19 Oct 1993 13:14:37 GMT
From: haven.umd.edu!darwin.sura.net!perot.mtsu.edu!raider!theporch!jackatak!
root@uunet.uu.net
Subject: Mobile Antennas
To: ham-ant@ucsd.edu

F. Kevin Feeney <fkf1@cornell.edu> writes:

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> In article <guN0ac5w165w@jackatak.raider.net> Jack GF Hill,  
> root@jackatak.raider.net writes:  
> >Try that lash-up, or make a mount like it to start. Then, if you think  
> >you still might like HF mobiling (I love it, but I am a masocist! ;^)  
> >try a real antenna, like a BugCatcher from GLA Systems (Not connected,  
> >just a Customer -- real satisfied! ;^) and PROPERLY installed, with  
> >bonding straps connecting the body of your truck with the cab, and  
> >tying the exhaust system in as well... otherwise, you'll have 20 over  
> >S-9 noise and no fun at all!  
> >  
>
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> I'm interested in improving my mobiling arrangements.
As in most endeavors, there are two ways to do this:

1) Lots of effort and invention

2) Spend money

I prefer the former, but as I age, I find time and effort are more dear to me than \$\$\$! ;^)

> Currently I'm using a number of hamstick and ten-tec helically loaded
> type whips on a home brewed "ugly mount" that has a 1 foot square
> baseplate mag mounted so that it is right against the surface of the roof.
This will work fine for a while, but will become very frustrating to
operate as you become more used to mobiling. These shortened and
loaded sticks do a fair job, but the longer and larger your antenna --
the closer you get to a true 1/4 wave stick *without* loading, the
happier you will be.

Then, too, there is the matter of noise introduced into your system
from having a fairly significant wind-load wiggling the mag-mount,
however strong the magnets and imperceptible the movement might be.
This kind of noise is quite low frequency in nature, and so does not
bother VHF/UHF much (hence the popularity of 5/8 wave mag-mounts for
2-meters,) however, as Gary says, go the whole route, save yourself a
ton of aggravation, and drill a hole for an NMO for VHF/UHF and then
enjoy worry-free operation with a good signal...

This is about HF, and drilling a hole and using a ball and spring
might have worked for the "standard" 102" whips of yore, but the bands
are more crowded, the rigs have solid-state finals, and get mightily
unhappy when the SWR goes above 1.5:1, and performance from the
antenna is too easy to achieve without sacrificing your lifestyle.

> seems to work real good on 10 down to 40 - so maybe I don't need to really
> 'fix' it. But I have seen the reports about how good the bug catcher
> works, and that it makes the most field strength in actual tests.
I am having fun on 75-meter mobile, working all states with 100 watts.
I am using a BugCatcher (from GLA Systems, Henry Allen, WB5TYD, Caddo
Mills, TX -- I am but a very happy customer) and it works.

> The problem I see with running one of those is the vehicle - a dodge
> carvan. I think the bug catcher is even taller than the whips I'm running
> and more fragile (certainly more expensive than \$16 if I whack it on the
> trees, which happens regularly).

Yes, it is more expensive, but Henry does NOT make a fragile antenna:
the bottom mast is 3/4" stainless (mine is 42" from base (feedpoint)
to the center loading coil)... The coil is reinforced with lexan
(3/8") and mine is made from #10 wire -- pretty solid. The top whip is
real stout and stainless. It has whacked a ton of tree limbs at 65+
and has taken some odd "sets" and angles, but nothing has been the
slightest bit fragile.

While on the subject: Henry basically sells the parts you need to custom install the mobile antenna of YOUR design and needs. The lower mast sections come in sizes from 12" to 60" and Henry will fabricate a custom length as well. The loading coils come in a variety of sizes and inductances -- one designed for 160-meters -- and are usually selected based upon what the operating habits and preferences of the operator are... this means, if you wanna do 75, buy the BIG coil and don't try to compromise and cheat a smaller coil into working. If 20 is your band, then use a smaller coil and save the wind load.

> I have tried to run antennas mounted on
> the sides of other vehicles like a rabbit, and they do very poorly -
> which is why I went to the roof mount.
I am not sure I could generalize that way. I have run "Master Mobile" antennas on the rear fenders of cars, and on the upper back panels of vans...they work flawlessly, as long as I tended to business and bonded everything together and ran my feedline correctly.

My wife drives a Dodge Caravan (long wheelbase version) and I use the special "van mount" that Henry designed so I can lift the rear gate easily...on my passenger car as well as on the van. The mount fits a trailer receiver/hitch, using a stainless 3/4" bolt and hexnut combo...

No matter what your preference in vehicles, it is IMPERATIVE that you properly ground the antenna base and bond any and all loose pieces of metal together. This means even attaching a bonding strap from the frame to the exhaust system. Noise is the enemy of the mobiler!

> I'm also wondering about how hard it is to change bands.
It is trivial, AFTER you gain experience and practice. When I tuned the antenna and set the shorting tabs for each band (or sub-band, in the case of 75-meters) I drew a small map of the coil taps and the base loading coil taps. To change bands, I take my map and swap shorting leads, and presto! No problem...

If the base mast were taller, I might have to disconnect the van mount tilt, but the taps are well within reach (I am 6'4", so it hasn't been a problem for me ;^)

> I have thought about putting a tuning cap and maybe a roller inductor
> in the box at the base of the antenna to allow some limited tuning.
That would work, but a better solution would be to use a length of PVC tubing and wind a roller inductor coil around the base mast for about the first 3 feet or so, then inside the PVC (not used as a coil form, but as a roller guide...) mount a roller to follow the coil and short out turns by rotating the whole mast with an electric screwdriver motor. This will allow for instant tuning to 1:1 while moving, and

will cover, given an appropriate size loading coil, from 160 through 10! It also allows for a more mechanically stable installation since the PVC guiding the roller can be guyed and braced without interfering with the antenna. Several antennas of this design are in use in western Tennessee and Arkansas...

> Gary, you mention 'doing it right' with the drill and all. I'm not averse
> to putting holes in the body - but I really think that if I pull down the
> inner decorative headliner, that it will never get back in place the way
> it's supposed to be. And it'll probably get wet. I'm willing to be
> educated. :-)

You need NOT do the headliner for HF... first off, there is no need to be on the roof for the antenna...the myth of getting above all the metal is just that. Certainly it will deform the pattern and interact with the antenna. However, these interactions are "stable" and do not change once you tune for them. KA0ZFX has a short BugCather on his mail truck, and if you ever hear Jon, it is an impressive signal, especially so when you consider the majority of the antenna is surrounded by metal from his cab and truck box! Stop worrying -- it works! (And, for those who have heard him, but not heard of his rig: he is running a solid-state kilowatt, and if anyone were gonna have problems with SWR and interaction with all that metal, Jon would. He hasn't. He *controls* whatever frequency he operates on with a bone-jarring signal....mobile!

I ran my feedline -- I modified the "van mount" to use a female "N" connector (bulkhead style) for the feedline rather than simply splitting the coax and trying to seal it again. I know the "N" connector is overkill from an RF standpoint, but it is WEATHERPROOF and a bunch easier for me to put on cable than PL-259s!!! Then, I ran the feedline UNDER the vehicle, along the frame rails where it was easy to hang and suspend, and drilled a HOLE under the seat for a double female "N" type barrel connector into the passenger compartment. Real neat. Keeps the feedline from being too long and twisting everywhere under seats and floor mats... A right angle "N" on the outbound end and right angle PL-259 at the radio and no cable to trip over!

> I really get a kick out of the mobiling and have lately found that I
> spend a surprising amount of my time at it on 40 meters.
So, as Nike would say: "Just DO it!"

> Oh btw, the rig is either an argosy or sometimes the 757GX.
That part matters only in the sense that the behavior of the rig under less than ideal load conditions is significant. I am running an IC-735, and get tickled when a brother in Mason City Iowa tells me I am kicking his brother's tail (the brother was running a beam from

Kevin Sanders, KN6FQ
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kevin%beacons@cyber.net

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Try Boatanchors
For A Real Lift

Date: Thu, 21 Oct 1993 17:20:22 GMT
From: sdd.hp.com!portal!lhaven.UUmh.Ab.Ca!combdyn!lawrence@network.ucsd.edu
Subject: SWR measurements are too good!
To: ham-ant@ucsd.edu

In article <1993Oct20.181229.719@TorreyPinesCA.ncr.com>
kevin@TorreyPinesCA.ncr.com (Kevin Sanders) writes:

>GM GA GE all,
>
>I am building an 8-element yagi-uda antenna for 220 MHz. The antenna itself
>is complete, now I'm working on the feed. I'm using a standard gamma match.
>The elements are solid aluminum stock, about 3/16" diameter. I used a piece
>of copper wire for the matching section, and have a sliding shorting bar for
>tuning.
>
>I connected the meter with a 2-foot coax jumper to the antenna for the tests.
>Problem is, my SWR measurements are too good (almost unmeasurable reverse pwr).
>More troublesome is the fact that the position of the shorting bar makes
>almost no difference in the readings...*even removing the shorting bar* makes
>very little difference.
>
>My question is, where is my power going? Where is the SWR dip I expected to
>see? The antenna appears to work OK, so should I care? I can't believe the
>antenna is so wide-band that I can't find an SWR over 1.1:1 anywhere in the
>220 band, no matter where the shorting bar is or whether I use one.
>
>Oh, if it makes any difference (I don't think it should), I'm using 100 ft
>of RG-58 coax between the meter and the transceiver. Lossy as heck I know,
>(35 watts out becomes 5 watts at the antenna!) but this is just for testing.
>
Well, you just answered the problem yourself.....I used the run 100 ft
of RG58 coax.....even when the cable was open at the other end, I had an
SWR of 1.1:1.

What I find disturbing is a new antenna I built (Copper Cactus) with 50 ft
of RG8/U reads the same SWR no matter where I move the feed point.

The antenna is always resonant at 146MHz, and shows 2:1 at both edges.

If I had known it was going to be this easy, I would have measured it for
145.010 MHz and welded the S0-239 directly onto the pipe...instead of using

pipeclamps.

I used to have a different Copper Cactus that matched 1.1:1 with the 100' of RG58....after switching to the RG8, I discovered it to be resonant at 148MHz, and not so good for packet operation. But, it worked great for the voice repeater (147.18+ and 147.060-).

I'm presently running 100' of RG8 and a short 3' section of RG58. (the weight of the RG8 kept pulling the handheld off of my desk, it probably wasn't doing the connector any good either).

--

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| WORK: lawrence@combdyn.com | (403)529-2162 | (403)529-2516 | CallSign
| HOME: dreamer@lhaven.uumh.ab.ca | (403)526-6019 | (403)529-5102 | VE6LKC

disclamer = (working_for && !representing) + (Combustion Dynamics Ltd.);

Date: Thu, 21 Oct 1993 22:19:13 GMT
From: dog.ee.lbl.gov!agate!news.ucdavis.edu!judy.ucdavis.edu!
szhall@network.ucsd.edu
Subject: Want opinion on MFJ-1796 antenna-tnx
To: ham-ant@ucsd.edu

I have been playing with the idea of a new MFJ-1796 antenna. If you own one please give me your opinion. Does it work well on all bands? Can u really use it without a tunner? If u had it to do again would u buy one again? I don't know of anyone who has one..tnx..Jeff N6MYF

End of Ham-Ant Digest V93 #87
